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ROPES & GRAY LLP  
ONE INTERNATIONAL PLACE  
BOSTON, MA 02110-2624

EXAMINER

GESESSE, TILAHUN

ART UNIT PAPER NUMBER

2684

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Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

10/039,308

Applicant(s)

ELLIOTT ET AL.

Examiner

Tilahun B Gesesse

Art Unit

2684

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 11/07/04.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-26 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-7 and 9-26 is/are rejected.
- 7) ☒ Claim(s) 8 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 5.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

## DETAILED ACTION

### *Specification*

1. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

### ***Claim Rejections - 35 USC § 112***

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1 and 10 are recite the limitation "line 7 and line 10 respectively" in "a cluster head". There is insufficient antecedent basis for this limitation in the claim.

### ***Claim Rejections - 35 USC § 102***

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

4. Claims 10-18, 20-23 and 26 are rejected under 35 U.S.C. 102(e) as being anticipated by Passman et al "Passman" (6,493,759).

Claims 10-12, Passman disclose a method for configuring a wireless terminal within a wireless network (figures 2A-4). Passman discloses operating the wireless terminal as a cluster head (cluster head or CH5 in figures 2-3), determining whether a

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cluster defined by operation of the wireless terminal contains the at least one functioning cluster radio (figures 2a-3), repeating the operating the operating if the cluster contains no functioning cluster radio (column 3, line 62-column 4, line 53), ascertaining whether continued operation of the wireless terminal as a cluster head is necessary if the cluster contains one or more functioning cluster radio attempting to resign as the cluster head if the continued operation of the wireless terminal as a cluster head is not necessary (column 4, lines 15-53 and figure 4). The cluster head or CH4 resign and becomes cluster member or CM5, figure 4.

Claim 13-14, Passman discloses broadcasting a resignation request to other cluster heads and cluster members associated with the cluster head (column 9, lines 10-30), receiving confirmation message from the other cluster heads and cluster members associated with the cluster head (column 9, lines 46-66), and determining whether confirmation messages have been received from all of the other cluster heads and cluster members to the which the resignation request was broadcast (column 10, lines 1-31 and figure 4).

Claims 15-16, Passman discloses repeating the operation if confirmation messages are not received from all of the other cluster heads and cluster members and determine if confirmation messages are received from all of the other cluster heads and cluster members (column 10, line 55-column 11, line 54).

Claims 17-18, Passman discloses a wireless network (figures 2-4). Passman discloses a plurality of first wireless terminals configured to operate as cluster heads (1a-1c of figure 2) by communicating with at least one other cluster head (CH1, CH4,

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and CH5) over one or more backbone links (figure 2), each one of the plurality of first wireless terminals (CH1, CH4, CH5, CM2, CM3, CM6 and CM7) including one or more backbone transceivers (CH1, CH4 and CH5), and at least one second wireless terminal configured to operate as a cluster member by communicating with an associated cluster head over one or more local links, each one of the at least one second wireless terminals including one or more cluster transceivers and wherein at least one of the first and second wireless terminals including both a backbone transceiver and a cluster transceiver (column 1, lines 16-28 and figures 2-4).

Claims 20-23, Passman discloses at least one of the first wireless terminals includes two different types of backbone transceivers (figure 4, CM5, link quit message and channel affiliate request link).

Claim 26, is method claim corresponding to the method claim 17 above. Therefore, claim 26 is analyzed and rejected as previously discussed with respect to claim 17.

***Claim Rejections - 35 USC § 103***

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 1-7,9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Passman et al "Passman" (US 6,493,759) in view of Aihara et al "Aihara" (US 2002/0082035).

Claim 1, Passman discloses a method for integrating a wireless terminal into a wireless network (figures 2 and 3). Passman discloses determining whether the wireless terminal (cluster members , CM2, CM3, CM6 and CM7) contains at least one functioning cluster transceiver (column 3, lines 33-53 and figures 2 and 3), attempting to affiliate the wireless terminal with a cluster head as a cluster member if the wireless terminal contains the at least one functioning cluster transceiver (column 4, lines 15-28).

Passman does not teach operating the wireless terminal as a cluster head if the wireless terminal does not contain the at least one functionality cluster transceiver.

However, Aihara, in a similar art of endeavor, teaches cluster head 5, deteriorates its signal strength within the cluster member, then cluster member 4 becomes a cluster head (figure 1). It would have been obvious t a person of ordinary skill in the art to operate cluster member as a cluster head, as taught by Aihara, with the motivation being to provide the efficient enhancement to a network communications having cluster members with strong signal within cluster to operate as head cluster.

Claim 2, Passman discloses operating the wireless terminal as a cluster member by communicating with an affiliated cluster head if the attempted affiliation is successful (Cluster members (CM2,CM3, and CM6, and CM7 affiliate with cluster head CH1 and CH5, within 1a and 1c due to affiliation is successful).

Claims 3-4, Passman discloses determining the wireless terminal contains one functioning backbone (figure 1).

Claims 5-7, Passman differs in teaching ignoring cluster heads with a signal strength less than a threshold, returning an unsuccessful affiliation result if all cluster

heads are ignored in the ignoring , and ordering any cluster heads not ignored in the ignoring into a list according to a predetermined criterion.

However, Aihara teach each radio station in the cluster to function as a tentative cluster head in order according to a predetermined time and period , then to acquire the receiving level (the radio wave conditions of communication for tentative cluster members configured to respective tentative cluster head (page 2, para. 0015). It would have been obvious to one of ordinary skill in the art at the time of invention was made to ignore cluster head with weak signal communication condition and affiliate to new cluster head, in order to improve the data communication with cluster members.

Claim 9, Passman discloses periodically executing an affiliation check, and repeating the determining after a delay period if the affiliation check is unsuccessful (column 2, lines 20-33).

7. Claim 19 is rejected under 35 U.S.C. 103(a) as being unpatentable over Passman in view of Twitchell (20040082296).

Claim 19, Passman does not teach first radio operating in an ultrahigh frequency range and wherein the cluster transceiver includes a second radio operating at substantially 2.4 Ghz.

However, Twitchell , in same field of endeavor, teaches the wireless reader tag transceiver operates with Bluetooth standards , such as wireless Ethernet transceiver, 802.11 and home RF and others (page 3, para 0031).

It would have been obvious to a person with ordinary skill in the art the time of invention was made to utilize a transceiver operating in 2.4 Ghz frequency such as

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Bluetooth or home RF transceivers, as taught by Twitchell, in order to minimize the cost of building infrastructure, and easy expanding coverage, by operating in short range ad hoc network.

8. Claims 24-25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Passman in view of Young et al "Young" (6,487,186).

Claims 24-25, Passman does not teach transceiver with an ultra wideband (UWB) radio and a time-division multiple access TDMA radio.

However, Young teaches transceiver with an ultra wideband radio and TDMA radio (column 1, lines 20-35, figure 1 and abstract).

It would have been obvious to a person with ordinary skill in the art at the time of invention was made to utilize a transceiver with UWB and TDMA radio, as taught by Young, in order to combat delay or latency of voice transmission and delay tolerance of data communication.

***Allowable Subject Matter***

9. Claim 8 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter the prior art does not teach the feature of storing a number of beacon messages from the affiliated cluster head ascending whether a set fraction of the beacon messages has a signal strength above a threshold value and continuing to operate as a



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cluster member if a set fraction of the beacon message has a signal strength above the threshold value

**Conclusion**

10. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Ramanathan teaches a plurality of similar station is operated so that the group automatically organizes or configures (abstract).

Toh (5,987,011) discloses a routing method for supporting ad hoc mobile communications within a radio communications network (abstract)

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tilahun B Gesesse whose telephone number is 703-308-5873. The examiner can normally be reached on flex.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nay Maung can be reached on 703-308-7745. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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*Tilahun Gesesse*  
Primary Examiner  
US Patent and Trademark Office  
Tel. 703-308-5873

October 25, 2004.

  
TILAHUN GESESSE  
PATENT EXAMINER